Graphical Compiler for the MCS-51 Microcontroller

062

J. C. Bracker

In both hobby and semi-professional electronics the use of microcontrollers is becoming more and more popular. This is mainly down to the Internet, where anyone can discuss their problems and experiences with microcontrollers, and application and programming software is as a rule freely downloadable.

Whereas in the past programming had to be done in hard-to-read machine code or assembler, these days high-level languages such as Pascal, C, Basic and a host of others are used. Spend a little time searching, and you will find a wide range of possibilities available on the Internet (or in the advertisements in *Elektor Electronics*!).

The GraphCom package described here belongs to the so-called fifth generation of programming languages. The term 'programming language' is not really the correct one here: it is more of a graphical compiler. Together with a graphical editor (in this case the freeware version of the Eagle schematic editor, downloadable from www.cad-soft.com) it is possible to use GraphCom to draw a block diagram of the desired system, just as when programming PLCs with the 'C-Control-Software' package available from Conrad Electronics. The schematic is converted into a netlist using the Export command in the editor. From this data GraphCom produces an assembler listing, which can then be converted into a HEX file using for example the Elektor EASM51 assembler.

The program comes with a library of functions which are used by GraphCom and converted into meaningful MCS-51 instructions. The GraphCom environment is a fully 'open system'. The functions can be extended at will by the user and tailored for a particular microcontroller. It is worth noting that GraphCom (in contrast to some other graphical compilers) is very frugal in its use of the microcontroller's resources, and so it is possible to write complex programs even for simple Atmel microcontrollers such as the 89C2051.

The package includes a terminal program which can be used to set parameters and observe the outputs of functional blocks in the target system. GraphCom is available in English and German versions, occupies about 4 MB (or only 350 MB as a ZIP file), and runs under Windows 95, Windows NT or Linux. A DOS version is also available. The program is shareware and can be downloaded from www.bracker-automation.de.

(014018-1)